

STATUS REPORT

Tsunami Hazard Mitigation Subcommittee

Period: 1997 - December 1998

"What difference has the Tsunami Program made with regard to reduction of loss of life and property in the five States?"

ALASKA - This State should have less loss of lives and property from future tsunamis because since 1997, the National Tsunami Hazard Mitigation Program (NTHMP) has provided funds that were unavailable anywhere else for the following actions and plans that are occurring:

Tsunami Program funds and staff were used to approach cutting edge tsunami modelers and other tsunami scientists to create a Blue Ribbon Panel to fill a gap in tsunami mitigation activities. This gap was a partnership where local communities could work closely with the scientists to explain and prioritize their needs. By listening to the locals, scientists are creating inundation maps that will have the most effective use for the locals to guide them in planning to move people and critical functions out of the danger zone during future warnings. The information developed is also potentially valuable to some longer range plans to reduce loss of property and functions. This panel will be customized for other communities.

Tsunami Program funds are being used on an ongoing basis to accomplish other local tsunami education and mitigation activities in the communities, including acceptance and planning for installation of tsunami signage as promoted by NTHMP in many communities.

Tsunami Program funds were leveraged to gain additional funds from the Alaska Science and Technology Foundation to help produce the highest priority maps.

RESULT: Many more Alaskans are aware of the danger of tsunamis and will remove themselves from the inundation areas and have greater knowledge about how to protect themselves than prior to NTHMP. Alaskans have developed more resources for mitigation and planning through partnerships fostered by NTHMP resources. NTHMP funds have been leveraged to find additional resources in the state. Alaska is developing their own internal expertise in tsunami modeling and expects to be able to more easily addressing mapping

needs of additional communities. The Blue Ribbon Panel is a catalyst and resource for tsunami awareness and action.

CALIFORNIA - This State should have less loss of lives and property from future tsunamis because since 1997, NTHMP has provided funds that were unavailable anywhere else for the following actions and plans that are occurring:

Tsunami Program funds and staff were used to hold workshops in California communities at risk to tsunami since the program began. Some workshops focused on local needs and priorities. Others focused on bringing the local experts together in a partnership to create the best inundation maps possible to protect California's large at-risk population.

Education of at-risk population has been a priority. Study of tsunami signage is underway.

California is the lead on a practical project to benefit all NTHMP states. In concert with the other NTHMP states, they are creating a document providing guidance for local governments to address saving of lives and property through the best mitigation and response practices that can be found in many scattered sources.

RESULT: Many more Californians are now aware of tsunami risk and the need for planning. Plans are being created or updated with new information. A network of tsunami knowledge is developed that will serve decision-makers well since NTHMP began. The new guidance document will serve all NTHMP states and others who are interested.

HAWAII - This State should have less loss of lives and property from future tsunamis because since 1997, NTHMP has provided funds that were unavailable anywhere else for the following actions and plans that are occurring:

Tsunami Program funding in Hawaii is being used to update and fill in gaps on their inundation maps, for example Oahu, and with the warning system.

Hawaii has been especially valuable to other NTHMP states as a resource for guidance and materials in the early days of NTHMP and continues to be a valuable advisor on many issues other States are interested in. This State houses

some of the most experienced tsunami scientists and responders whose expertise has been at the disposal of NTHMP. Many of Hawaii's educational materials and awareness activities have been built upon.

Tsunami Program funds have allowed Hawaii to enhance some of their existing and new partnership efforts with a variety of groups interested in tsunamis.

Hawaii's history with numerous tsunami losses has been a source of valuable lessons for other NTHMP states.

RESULT: Hawaii can further reduce loss of lives and property based on old gaps in mapping that are now being addressed, continued participation in tsunami science issues review and update discussion by Hawaiian experts, upgrading of the warning system, and education of new and younger populations to the history and risk of tsunamis in Hawaii.

OREGON - This State should have less loss of lives and property from future tsunamis because since 1997, NTHMP has provided funds that were unavailable anywhere else for the following actions and plans that are occurring:

Tsunami Program funds have been used to produce additional educational materials that reach out to a large and diverse coastal population, including visitors. These products have been so successful that other NTHMP States have used the same or similar products in their education activities.

The Tsunami Program funded several workshops and meetings bringing local communities together to discuss issues of priority need. Participants went into the field with scientists and emergency managers to learn how to plan their own evacuation routes. Several participants continue to work at a State/Local level as a work group to address tsunami risk issues common to communities in Oregon.

Tsunami Program funds have produced maps to guide evacuation planning for a coast that hosts large numbers of inland visitors.

Tsunami Program funds have established a center of modeling expertise in Oregon that benefits all the NTHMP States through oversight, advisory, and archival functions for tsunami mapping in other States.

Oregon is also the lead in a multistate project researching, comparing and making

recommendations about the various tsunami siren warning systems currently in action. It is felt that loss of life may result if some kind of consistent standards are not explored.

RESULT: Thousands of residents' and visitors' lives are safer because of the mapping and education efforts funded by NTHMP. Oregon is a center of expertise for tsunami mapping and mitigation planning. Many of the Tsunami Program funded products developed in Oregon benefit other States directly.

WASHINGTON - This State should have less loss of lives and property from future tsunamis because since 1997, NTHMP has provided funds that were unavailable anywhere else for the following actions and plans which have and are occurring:

Tsunami Program funds and staff have provided seed activities that resulted in a State and Local Tsunami Work Group. Early leadership by NTHMP staff has shifted to County leaders who establish priorities needing funding and staff input to best result in saving lives and property. A recent development is a working partnership to try to provide much wider coverage of the coastal warning and information delivery system. A highly successful tsunami hazard education sign and evacuation sign system was implemented. Locals have been giving valuable input to the design of inundation maps that will make their use much more efficient.

Several workshops hosted in different coastal Counties have resulted in increased awareness by leaders, responders and residents of these communities to tsunami risk and mitigation.

Better awareness campaigns of tsunami risk have been funded.

Washington is leading a couple of multistate projects including a Pacific States Tsunami Information System for appropriate users to keep them updated on the latest useful findings, and a book describing risk from the Cascadia Subduction Zone earthquake as pictured in lessons learned from the Chilean Great Earthquake.

RESULT: A strong coalition of coastal Counties and tribal leaders are increasing the number of

lives that will be saved as a result of their actions and planning with regard to education and mitigation.

Additional Results and Comments:

NTHMP is receiving increased requests from other States and territories for information and materials to help them reduce future loss to tsunamis, for example the Caribbean and Pacific Islands. Established tsunami risk groups, in places like Japan, are also interested in what NTHMP is developing that may be useful for them, and they are also sharing their methods with NTHMP.

The various types of State and local partnership coalitions that grew out of the original Federal and State partnership ensures that appropriate local priorities and needs are being met. Locals have acknowledged the leadership and assistance of the NTHMP as described in the words of one County emergency manager, "We are light years ahead of where we were in 1994". The year 1994 is referred to in memory of the variety of responses (some appropriate, some not) that occurred following a tsunami warning. Some of these responses put thousands of people at risk because of simple ignorance and lack of resources for tsunami planning back then.

From the Federal point of view, it is particularly desirable to hope that States would work cooperatively to use scarce resources for the same ends. The States in the NTHMP have shown exemplary leadership in rising above protecting a particular State's "piece of the pie." They work together to design the priority needs, address their particular needs, and assign a significant piece of the funds to projects that benefit more than one of them, even though certain projects may not benefit all of them at once. They also show leadership in providing for their local communities in a way that generously invites the locals into the original planning process for the use of the scarce resources.